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## The Breeding of the Grey or Spottedbilled Pelican, *Pelecanus philippensis* Gmelin

BY

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(With four plates)

Where do pelicans breed in India? This is a question often asked, but an answer never seems to be forthcoming. I have been asking forest officers, sportsmen, and others in north-east India for many years now, but no pelicanry seems to exist in these parts.

Pelicans are quite common in this sub-continent, especially the Grey or Spottedbilled Pelican (*Pelecanus philippensis* Gmelin), and I have often seen them on the Brahmaputra and on *jheels* in Assam. I remember seeing several hundreds on a *jheel* in Kaziranga in December 1950, and there are usually a few dozen to be found in that sanctuary. On the Manas and Beki rivers in north-west Assam there always used to be about a hundred birds near the Bhutan border, though as a matter of fact this cold weather only three were to be seen.

It is an extraordinary fact that such a large and spectacular bird as the pelican, justly famed for being able to hold more in its beak than its belly can, should not be better known. In the last century Blanford deplored that of late years no authentic account of pelicans breeding in India had appeared, though Jerdon (writing in 1864) said he had visited a pelicanry in the Carnatic 'where the Pelicans have (for ages I was told) built their rude nests, on rather low trees in the midst of a village, and seemed to care little for the close and constant proximity of human beings'.

Whistler stated in 1928 that there was no known breeding haunt of the pelican in India. In Stuart Baker's book (1929) he mentions that 'there was formerly a breeding place in Sylhet, possibly still existing, where they did not begin to lay until July, when the floods had commenced to rise'; and it would be interesting to know if this pelicanry still exists in present-day East Pakistan.

Delving into the back numbers of the *Journal of the Bombay Natural History Society*, I find (in Vol. 14, page 401) that at the end of March 1890 a person named W. Howard Campbell found a large number of Grey Pelicans breeding in company with Painted Storks in a secluded valley in the extreme east of the Cuddapah District, in what is now Andhra State: 'The nests, of which there were several hundreds, were on neem and tamarind trees in a small village called Buchupalle. The people of the village were very much averse to any interference with the nests. The birds trusted them and they would not have them injured, they said.' It is not known if this small pelicanry still exists.

In June 1906 (in Vol. 17, page 806) C. E. Rhenius found a small pelicanry in the village of Kundakolam in the extreme south of Tinnevely District, in Madras State. About twelve tamarind trees contained nests with fully-fledged young birds. There were also Painted Storks nesting there—the Pond Herons, Cattle Egrets, and Night Herons had left: 'The villagers looked on these birds as semi-sacred and would not allow anyone to disturb or molest them, so that they return to build there year after year, and have done so for years past.' In April 1944 (in Vol. 45, page 426) this very pelicanry was visited by C. G. Webb-Peploe, who saw only ten nests of pelicans with young birds in them (and also 200 nests of Painted Stork and many of Night Heron and Little Egret). The headman of the village protected them, he said, and the birds seemed to have been nesting there for 60-70 years at least. There is no further news of this diminutive colony of pelicans.

From all accounts pelicans breed in Ceylon in February and March; but the largest pelicanry in this part of Asia, if not in the whole world, is or was near Shwe-gyen on the Sittang River in Burma. This huge pelicanry, described as being some twenty miles long by five miles broad and as containing 'millions' of pelicans and Adjutant Storks, was discovered by Oates in 1877. The nests contained eggs in November. Stuart Baker in 1929 reported that they still bred there in their hundreds of thousands in company with Adjutants. The area was again visited by Wickham in 1910 who found that 'countless millions of birds still bred over a vast area'. According



General view of part of pelicanry showing nests in palmyra and babool trees



Nesting activity on palmyra trees

*Photos : E. P. Gee*





Nesting activity where babool and palmyra trees intermingle, showing adults and very young chicks



Three incubating adults. Each nest contained two eggs. When excited, the birds extend their pouches.

*Photos : E. P. Gee*



to B. E. Smythies the birds were still there in 1935, but in 1946 'the immense colonies which Oates found on the Sittang have disappeared'. No recent news of this pelicanry has been received.

Now to return to India. In 1946 (Vol. 48, pages 656-666) K. K. Neelakantan of Trivandrum commendably discovered a pelicanry of considerable size near the Kollair Lake in West Godavari District of what is now Andhra State. It was close to the village of Aredu, and is reached by train on the main line from Calcutta or Madras, the station Tadepallegudem being 15 miles away. This same person made an official visit to the pelicanry in December 1959 on behalf of the Andhra Government, and was kind enough to supply me with all the latest information about the place, where to stay and so on.

Accordingly I visited the pelicanry in January of this year (1960), and found a remarkable sight. Probably not less than 3000 pelicans were nesting in an area of about two square miles of well-irrigated paddy fields. The nests were mainly in palmyra trees, and sometimes in babool or rain trees or coconut palms, which are planted along the irrigation bunds. Sometimes there were as many as twelve to fifteen nests in one tree, and often not far up from the ground. The villagers protect them as much as they can—partly because of the trust the visiting birds place in them, and partly because of the value of the guano or droppings as a fertilizer for the crops.

The birds this year have shifted their breeding ground from Aredu. There is a small colony of about 25 nests near Ganapavram, but the large colony of about 1500 nests is near Kolamuru village, about three miles from Aredu. When I was there from January 13th to 19th the small pelicanry contained half-grown young birds, while the nests of the larger one had eggs or else very young chicks. It was thus possible to see the breeding of this bird in all its stages.

I went there primarily for photography, both ciné and still, but managed to find some time for observation of the habits of these extraordinary birds. Although the pelican is a large and somewhat ungainly-looking creature, once it has managed to become airborne after much effort and flapping it flies very gracefully. With under-carriage of legs and webbed feet up, head well back on the shoulders, and large bill resting on the front of the neck it sails through the air with apparently little effort.

I thought at the time that I had stumbled on something new about the soaring of pelicans which is done regularly over the nesting area. Every day I saw this 'community soaring' going on, usually about 50-150 birds wheeling round and round on the thermal currents

in the same way as vultures do. They (probably the mates of the brooding birds) would fly from their nests and join the soaring at the lowest level, and soon attain a great height, eventually becoming tiny specks in the sky. I observed, however, on two days at about 2.30 to 3.30 p.m. that some pelicans left the 'community soaring' and went in for 'individual soaring' at a great height, wheeling round and round on their own. And then suddenly a bird would start to do aerobatics—twisting, turning, and rolling in a most peculiar and comical way. Out of sheer *joi de vivre*, I presume.

Most people know that the upper mandible of the pelican is long, slightly boat-shaped, and ends in a nail or hook. The lower mandible consists of two flexible arches which support a large elastic pouch. This pendant and distensible pouch of naked membrane forms an ideal landing net when the birds are fishing. I noticed that whenever the birds became excited in any way, the pouch was extended giving the beak a thick triangular appearance.

Many people must have seen pelicans fishing: like cormorants they do it together in a party, forming a line or semi-circle and driving the fish into the shallows where they scoop them up in their pouches. Talking about fish—how do pelicans choose a nesting site? How do pelicanries come into existence, to which pelicans will come from all parts of India and from which, after the breeding season is over, they will return to their respective haunts in all parts of India? The answer presumably is—fish supply. They must have a place where they can catch sufficient fish to feed themselves and their growing offspring. The amount of fish required to feed so many pelicans must be very large indeed, amounting to several tons per day.

From a cloth 'hide' fixed in a tree just above the level of some of the nests, I was able to observe and photograph the intimate family life of the pelicans in their home. The enjoyment derived from being only a few feet away from wild birds while they have not the faintest idea that you are there has to be experienced to be believed. After a short absence due to the alarm caused by your climbing into the 'hide', the huge birds return to their nests in twos and threes, wings outstretched and undercarriage of legs and webbed feet forward. Then the inevitable shuffling and bickering of birds breeding in a community. Then those with eggs settle down to brood, while those with chicks start to feed them.

The eggs are a dirty white, and the chicks are born naked. Soon a snow-white down covers their bodies, and this is gradually replaced by sprouting feathers of a brownish grey. The bills of the young





One of the unfortunate youngsters which had fallen from its nest. It was strutting up and down the ground below picking up what it could



Parent feeding very young chick, which is mostly inside the capacious pouch. The bulge where the bill of the chick is pressed against the membrane of the pouch can be plainly seen

*Photos : E. P. Gee*





A close-up of nests showing young bird about 2 to 3 weeks old at right



A nest with parents and young on top of a babool

*Photos : E. P. Gee*



birds are smallish—but the hooked nail and the pouch are there. The bills develop very quickly.

The pelican is renowned for being extremely devoted to its young. In heraldic and ecclesiastical symbols in England it used to be represented as standing above its nest with its wings outstretched and nourishing its young with its blood. It used to be described as 'a pelican in its piety' (piety here having the classical meaning of filial devotion). This legend that pelicans feed their young with their blood probably arose from the fact that these birds, like cormorants and darters, feed their young by regurgitating partly digested fish into the tops of their pouches for the young to feed on.

Almost spellbound I watched how a parent bird with wonderful tenderness and care nudges a youngster with the tip of its bill, and then the chick stands up and thrusts its bill and neck far into the parent's pouch. In the case of a young chick the whole of the youngster disappeared into the pouch, making the proverbial sword-swallower's act seem nothing at all. After one chick has had enough, and the parent seems to be the sole judge of this, another chick is gently nudged into feeding activity. If a previously fed chick tries to get a second helping, it is carefully pushed aside by the fair-minded parent—though I did see sometimes that two or three small chicks all got into the parent's capacious pouch at once!

In most trees the nests were contiguous, often looking like strings of large beads. And the chicks, two or three in a nest, often got mixed up with those of other nests. Once, while the parent birds were away due to my arrival at the tree, I got a boy to climb up and sort out the chicks by their age groups, putting the tiny naked ones together where they belonged and the larger ones in their nests and so on. But in no time at all they began to stagger about like drunks and got mixed up again. When the parent birds returned, I think they managed to identify their own babies before feeding commenced. One poor adult pelican seemed to have been unlucky in love, with no mate or nest of its own, and always got pecked by its neighbours before sitting down at the end of the branch on nothing at all . . .

Sometimes a chick lurches too far, and over it goes—down to the ground. When this happens, the chick is completely ignored by the otherwise devoted and 'pious' parents, which seem not to notice it and make no effort to help or feed it. If it is a young chick it is bound to perish either from starvation or from attack by a predator. If it is a larger chick it struts up and down below the nests, picking up what fish it can; and such a bird has a chance of surviving.

There were a few crows about, scavenging on what they could find and possibly stealing eggs at times. The number of Brahminy Kites was very great—these were living apparently on fish dropped or vomited by the pelicans or spilt from feeding at the nests. Pariah Kites were few in number. Both species of kites joined in the 'community soaring' of the pelicans.

The attitude of the local villagers to the pelicans was interesting. Some of them said to me, through an interpreter, that it was wrong to shoot or harm the pelicans which were visitors, coming every November. They brought good health to their villages, said some of them, and their excreta provided a good fertilizer for their fields. Others said they did not disturb or harm the pelicans, as these birds did no harm to them. One villager suspiciously thought that I was taking the blood out of the pelicans, but when it was explained to him that I was doing just the opposite he seemed to understand.

I was informed that small gangs of 'low-caste men' sometimes came from Bhimavaram at night, and speared roosting pelicans with long bamboo spears for selling to hotels. About a hundred birds, I was told, had been killed this season so far (mid-January). It is to be hoped that the State Government of Andhra will take appropriate steps to prevent this sort of thing, by declaring the pelican a protected species (at least during the breeding season), or else by constituting the pelicanry as a sanctuary or protected area.

Now for noises made by pelicans. When Oates visited the huge pelicanry in Burma in 1877 he commented on the silence of the place. His actual words were: 'Notwithstanding the millions of birds which breed in this forest, a most wonderful silence prevails. The pelican seems to be perfectly mute, and the adjutants only bellow at intervals. The only sound which is constantly heard, and after a time even this sound passes unnoticed, is a sort of Aeolian harp caused by the movement of the wings of innumerable birds high in the air.'

But in the Andhra colony the noise of the nesting pelicans could be plainly heard a quarter of a mile away. And when standing near the trees containing nests the noise was really loud: there were the long-drawn moanings, harsh throaty gruntings, and sharp yap-yaps like the yelping of a dog. Also every now and then a bird would open wide its bill and give a series of loud claps—two, three, or four claps were frequently heard. As evidence of the volume and variety of pelican noises, I made a recording—and the tape-recorder, like the camera, cannot lie.

What of the future? It is most reassuring to know that the villagers of those parts extend a sort of traditional welcome and pro-



tection to the visiting pelicans. I wonder if villagers in other parts of the country would do the same, should the pelicans have to move from their present colony?

For if the Kollair Lake is the main source of their fish supply, then the future of the present pelicanry is uncertain due to the fact that this lake is being drained in an agricultural project. I was told that in three or four years' time the lake would practically cease to be. So it seems that alternative nesting sites may possibly have to be found by the birds in the years to come. Perhaps some of the new sheets of water formed by the multi-purpose hydro-electric and irrigation projects in fast developing India may eventually help provide the answer to this problem.